Manganese Levels in Ohio's Ambient (Raw Water) Ground Water Quality Monitoring Network

Station ID	Station Name	Well Name	county_name	well_status_desc	pws_type	Lithcode	LithDescription	aquifer_name	Well Depth	Units	Concentrations Sample Count	Min	Avg	Max
39SEN00437	GREEN SPRINGS WELLFIELD	1	Seneca	(IN) Inactive	COMM	LS	CDO (Dolostone)	Undiff Salina Dolomite	108	ug/l	4	13	17	23
39SHE00094	SIDNEY WELLFIELD	6	Shelby	(AR) Active Rotational	COMM	LS	CDO (Dolostone)	Lockport Dolomite	200	ug/l	20	0	16	20
39SHE00106	LAKE LORAMIE STATE PARK	1	Shelby	(IN) Inactive	TNC	LS	CDO (Dolostone)	Lockport Dolomite	105.5	ug/l	10	45	57	75
39SHE00421	ANNA WELLFIELD	4	Shelby	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Teays Buried Valley	123.5	ug/l	21	29	37	45
39SHE00423	FORT LORAMIE WELLFIELD	2	Shelby	(SB) Standby	COMM	LS	CLS (Limestone)	Ordovician undivided	0	ug/l	2	29	47	64
39SHE03654	FORT LORAMIE WELLFIELD	4	Shelby	(AR) Active Rotational	COMM	LS	CLS (Limestone)	Ordovician undivided	302	ug/l	19	18	21	33
39SHE08924	ANNA WELLFIELD	5	Shelby	(SB) Standby	COMM	UNC	USD (Sand)	Teays Buried Valley	105	ug/l	1	33	33	33
39STA00012	MASSILLON STEEL CASTINGS	1	Stark	(IN) Inactive	Non-PWS	UNC	USG (Sand/Gravel)	Tuscarawas River	137	ug/l	4	240	280	360
39STA00162	CANTON NORTHEAST WTP	17	Stark	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Sandy Creek	196	ug/l	17	193	305	360
39STA00163	CANTON NORTHWEST WTP	5	Stark	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Sandy Creek	132	ug/l	14	348	439	685
39STA00164	NORTH CANTON WTP	4	Stark	(AR) Active Rotational	COMM	SS	CHS (Shale/Sandstone)	(blank)	397	ug/l	18	170	301	821
39STA00171	MINERVA WELLFIELD	3	Stark	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Sandy Creek	76	ug/l	2	425	446	467
39STA00172	BREWSTER WELLFIELD	4	Stark	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Sugar Creek	105	ug/l	20	236	304	382
39STA00173	CANAL FULTON	6	Stark	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Tuscarawas River	172	ug/l	16	113	123	137
39STA00175	MASSILLON WELLFIELD	7	Stark	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Tuscarawas River	165	ug/l	21	280	364	439
39STA00176	NAVARRE WELLFIELD	3	Stark	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Tuscarawas River	0	ug/l	4	686	740	787
39STA00212	MINERVA WELLFIELD	4	Stark	(AO) Active Organic	COMM	UNC	USG (Sand/Gravel)	Sandy Creek	85	ug/l	21	358	420	486
39STA00213	CANAL FULTON	4	Stark	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Tuscarawas River	169	ug/l	1	122	122	122
39STA00254	NAVARRE WELLFIELD	1	Stark	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Tuscarawas River	92	ug/l	32	53	629	741
39STA00448	EAST SPARTA WELLFIELD	1	Stark	(AS) Active Standard	COMM	SS	CSS (Sandstone)	(blank)	270	ug/l	25	99	115	128
39STA08765	EAST SPARTA WELLFIELD	2	Stark	(SB) Standby	COMM	SS	CSS (Sandstone)	(blank)	0	ug/l	1	56	56	56
39STA08895	CANTON NORTHWEST WTP	7	Stark	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Sandy Creek	132	ug/l	1	504	504	504
39STA08904	CANTON NORTHWEST WTP	4	Stark	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Sandy Creek	166	ug/l	7	731	860	1030
39SUM00178	HUDSON WATER PLANT	1	Summit	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Cuyahoga Buried Valley	141	ug/l	19	10	22	27
39SUM00449	REVERE HS (BATH SCHOOL)	1	Summit	(IN) Inactive	NTNC	SS	CSH (Shale)	Ohio and Olentangy Shales	82	ug/l	11	22	42	105
39SUM02561	HAPPY DAYS VISITOR CENTER	OLD	Summit	(IN) Inactive	TNC	SS	CHS (Shale/Sandstone)	Cuyahoga Group and Berea Sandstone	300	ug/l	3	69	73	76
39TRU00003	YOUNGSTOWN AFB	2-5	Trumbull	(IN) Inactive	Non-PWS	SS	CSS (Sandstone)	(blank)	500	ug/l	1	220	220	220
39TRU00161	KRAFT GENERAL	9	Trumbull	(IN) Inactive	Non-PWS	SS	CSS (Sandstone)	Bedford Shale, Cussewago Sandstone	115	ug/l	13	50	161	252
39TRU00438	CORTLAND WELLFIELD	5	Trumbull	(AR) Active Rotational	COMM	SS	CSS (Sandstone)	(blank)	318	ug/l	21	0	8	12
39TRU08753	KRAFT GENERAL	11	Trumbull	(IN) Inactive	Non-PWS	SS	CSS (Sandstone)	Bedford Shale, Cussewago Sandstone	115	ug/l	8	63	131	404
39TUS00004	DOVER WELLFIELD	7	Tuscarawas	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Sugar Creek	105	ug/l	29	210	355	1020
39TUS00013	SIMONDS-HELLER TOOLS	6	Tuscarawas	(IN) Inactive	Non-PWS	UNC	USG (Sand/Gravel)	Tuscarawas River	90	ug/l	9	0	429	730
39TUS00087	GNADENHUTTEN WATERWORKS	1	Tuscarawas	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Tuscarawas River	116	ug/l	25	133	404	476
39TUS00168	BOLIVAR WELLFIELD	4	Tuscarawas	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Tuscarawas River	100	ug/l	33	16	82	146
39TUS00170	MINERAL CITY WELLFIELD	1	Tuscarawas	(IN) Inactive	COMM	SS	CSH (Shale)	(blank)	324	ug/l	2	220	225	230
39TUS00174	CANTON SUGARCREEK WELLFIELD	9	Tuscarawas	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Sugar Creek	250.75	ug/l	28	391	503	599
39TUS00243	CANTON SUGARCREEK WELLFIELD	8	Tuscarawas	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Sugar Creek	250	ug/l	1	440	440	440
39TUS00367	DOVER WELLFIELD	8	Tuscarawas	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Sugar Creek	102.5	ug/l	2	160	180	200
39TUS06279	CANTON SUGARCREEK WELLFIELD	10	Tuscarawas	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Sugar Creek	250	ug/l	3	575	619	641
39TUS08355	SANDY VALLEY HIGH SCHOOL	1	Tuscarawas	(IN) Inactive	COMM	SS	CSS (Sandstone)	Massillon through Sharon formations	315	ug/l	2	0	0	0
39TUS08740	DOVER WELLFIELD	0	Tuscarawas	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Sugar Creek	100	ug/l	2	461	479	497
39UNI00192	MARYSVILLE WELLFIELD	3	Union	(AS) Active Standard	COMM	LS	CDO (Dolostone)	(blank)	200	ug/l	25	14	25	60
39UNI00202	GENERAL INDUSTRIES INC	1	Union	(IN) Inactive	Non-PWS	LS	CDO (Dolostone)	(blank)	200	ug/l	4	0	28	50
39UNI00227	RICHWOOD WELLFIELD	4	Union	(AR) Active Rotational	COMM	LS	CDO (Dolostone)	(blank)	165	ug/l	24	0	1	13
39UNI00388	RICHWOOD WELLFIELD	5	Union	(SB) Standby	COMM	LS	CDO (Dolostone)	(blank)	165	ug/l	2	23	28	32
39VAN00154	CONVOY WATERWORKS	4	Van Wert	(AR) Active Rotational	COMM	LS	CDO (Dolostone)	Salina Group and Lockport Dolomite	267	ug/l	20	0	11	17
39VIN00073	McARTHUR WELLFIELD	8	Vinton	(AR) Active Rotational	COMM	SS	CSS (Sandstone)	Logan and Black Hand undivided	255	ug/l	35	0	18	23
39VIN00181	ZALESKI WELLFIELD	5	Vinton	(SB) Standby	COMM	SS	CSS (Sandstone)	Logan and Black Hand undivided	317	ug/l	4	0	0	0
39VIN00218	ZALESKI WELLFIELD	3	Vinton	(IN) Inactive	COMM	SS	CSS (Sandstone)	Logan and Black Hand undivided	310	ug/l	3	0	0	0
39VIN00250	ZALESKI WELLFIELD	6	Vinton	(AR) Active Rotational	COMM	SS	CSS (Sandstone)	Logan and Black Hand undivided	375	ug/l	21	0	27	478
39WAR00046	LEBANON WELLFIELD, PLANT 1	5	Warren	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Turtle Creek	65	ug/l	28	21	148	214
39WAR00102	FRANKLIN WELLFIELD	7	Warren	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Great Miami River	112	ug/l	34	20	104	180
39WAR00110	LEBANON CORRECTIONAL INST	3	Warren	(IN) Inactive	NTNC	UNC	USG (Sand/Gravel)	Shaker Creek	129	ug/l	17	0	17	45
39WAR00156	FRANKLIN WELLFIELD	6	Warren	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Great Miami River	90	ug/l	2	30	33	35
39WAR00211	LEBANON WELLFIELD, PLANT 1	4	Warren	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Turtle Creek	117	ug/l	1	151	151	151
39WAR00376	LEBANON CORRECTIONAL INST	2	Warren	(IN) Inactive	NTNC	UNC	USG (Sand/Gravel)	Shaker Creek	0	ug/l	5	30	36	47

0 equals ND (<10 ug/l); 0 was used for ND values to calculate average.

Manganese Levels in Ohio's Ambient (Raw Water) Ground Water Quality Monitoring Network

Station ID	Station Name	Well Name	County Name	Well status desc	pws_type	Lith code	LithDescription	aquifer name	Well Depth	Units	Concentrations Sample Count	Min	Avg	Max
39OTT00139	ELMORE WATERWORKS	3	Ottawa	(AS) Active Standard	COMM	LS	CDO (Dolostone)	Lockport Dolomite	402	ug/l	23	0	1	18
39OTT03679	ELMORE WATERWORKS	1	Ottawa	(IN) Inactive	COMM	LS	CDO (Dolostone)	Lockport Dolomite	381	ug/l	1	0	0	0
39PAU00032	OAKWOOD WELLFIELD	3	Paulding	(IN) Inactive	COMM	LS	CDO (Dolostone)	(blank)	480	ug/l	5	0	0	0
39PAU00238	OAKWOOD WELLFIELD	1	Paulding	(AR) Active Rotational	COMM	LS	CDO (Dolostone)	(blank)	206	ug/l	13	0	5	65
39PAU00432	PAYNE WELLFIELD	1	Paulding	(AR) Active Rotational	COMM	LS	CDO (Dolostone)	Salina Group and Lockport Dolomite	325	ug/l	20	18	58	81
39PAU03678	PAYNE WELLFIELD	2	Paulding	(IN) Inactive	COMM	LS	CDO (Dolostone)	Salina Group and Lockport Dolomite	289	ug/l	2	0	25	50
39PAU06025	OAKWOOD WELLFIELD	2	Paulding	(SB) Standby	COMM	LS	CDO (Dolostone)	(blank)	230	ug/l	4	0	0	0
39PER02769	THORNVILLE WELLFIELD	1-2	Perry	(AS) Active Standard	COMM	SS	CHS (Shale/Sandstone)	Logan and Cuyahoga Group undiv	120	ug/l	25	0	32	59
39PIC00193	CIRCLEVILLE WELLFIELD	4	Pickaway	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Scioto River	125	ug/l	18	41	78	117
39PIC00232	ASHVILLE WELLFIELD	1	Pickaway	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	East Columbus Buried Valley	65	ug/l	13	88	112	149
39PIC00249	PICWAY POWER PLANT	1	Pickaway	(AR) Active Rotational	Non-PWS	UNC	USG (Sand/Gravel)	Scioto River	94.75	ug/l	24	34	41	59
39PIC00275	DARBYVILLE WELLFIELD	1	Pickaway	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Big Darby Creek	26	ug/l	4	110	118	133
39PIC04967	WILLIAMSPORT WELLFIELD	2	Pickaway	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Scioto River	60	ug/l	1	21	21	21
39PIC08888	ASHVILLE WELLFIELD	3	Pickaway	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	East Columbus Buried Valley	74	ug/l	12	96	101	109
39PIK00071	PIKETON WELLFIELD	1	Pike	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Scioto River	72	ug/l	29	279	343	540
39PIK00144	WAVERLY WELLFIELD	3	Pike	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Scioto River	66	ug/l	26	314	402	490
39PIK00209	PIKETON WELLFIELD	3	Pike	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Scioto River	69	ug/l	1	340	340	340
39PIK00215	WAVERLY WELLFIELD	1	Pike	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Scioto River	70	ug/l	8	350	412	470
39PIK00366	WAVERLY WELLFIELD	4	Pike	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Scioto River	70	ug/l	2	431	436	441
39POR00157	GARRETTSVILLE WELLFIELD	20	Portage	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Mahoning River	178	ug/l	17	184	230	263
39POR00155	HIRAM WELLFIELD	1	Portage	(AR) Active Rotational	COMM	SS	CSS (Sandstone)	Massillon through Sharon formations	150	ug/l	16	301	328	363
39POR00166	MANTUA WELLFIELD	3	Portage	(IN) Inactive	COMM	SS	CSS (Sandstone)	Massillon through Sharon formations	125	ug/l	9	247	266	292
39POR00167	SHALERSVILLE WELLFIELD	1	Portage	(AS) Active Standard	COMM	SS	CSS (Sandstone)	(blank)	201	ug/l	24	138	213	310
39POR00187	KENT WELLFIELD	11	Portage	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Cuyahoga Buried Valley	120	ug/l	15	40	334	437
39POR08645	KENT WELLFIELD	10	Portage	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Cuyahoga Buried Valley	131.7	ug/l	1	452	452	452
39POR08656	MANTUA WELLFIELD	1	Portage	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Cuyahoga Buried Valley	100	ug/l	22	175	192	202
39PRE00050	CAMDEN WELLFIELD	2	Preble	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Seven Mile Creek	41	ug/l	23	0	4	70
39PRE00377	CAMDEN WELLFIELD	3	Preble	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Seven Mile Creek	45	ug/l	1	0	0	0
39PRE00411	LEWISBURG WELLFIELD	1	Preble	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Twin Creek	60	ug/l	19	70	80	102
39PRE00415	GRATIS WELLFIELD	1	Preble	(AS) Active Standard	COMM	UNC	UGR (Gravel)	Twin Creek	26	ug/l	16	0	1	20
39PRE00416	EATON BLACK PLANT	1	Preble	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Twin Creek	62	ug/l	18	26	33	40
39PRE04432	EATON BLACK PLANT	3	Preble	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Twin Creek	70	ug/l	1	24	24	24
39PUT00134	LEIPSIC WATERWORKS	3	Putnam	(AR) Active Rotational	COMM	LS	CDO (Dolostone)	(blank)	510	ug/l	18	0	0	0
39PUT00430	KALIDA WELLFIELD	1	Putnam	(AR) Active Rotational	COMM	LS	CDO (Dolostone)	(blank)	400	ug/l	22	27	36	49
39RIC00027	MANSFIELD STP	1	Richland	(AO) Active Organic	Non-PWS	UNC	USG (Sand/Gravel)	Mohican River	120	ug/l	39	19	254	350
39RIC00137	STONE CONTAINER CORP	1	Richland	(IN) Inactive	Non-PWS	SS	CSS (Sandstone)	Logan and Black Hand undivided	200	ug/l	8	80	188	270
39RIC00145	CRESTLINE WELLFIELD	2	Richland	(IN) Inactive	COMM	UNC	USD (Sand)	Mohican River	195	ug/l	3	275	290	305
39RIC00204	CRESTLINE WELLFIELD	3	Richland	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Mohican River	206	ug/l	18	178	216	247
39RIC05554	MANSFIELD STP	2	Richland	(SB) Standby	Non-PWS	UNC	USG (Sand/Gravel)	Mohican River	120.67	ug/l	4	16	211	308
39RIC08896	BELLVILLE, VILLAGE OF	4	Richland	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	(blank)	92	ug/l	11	10	105	149
39RIC08898	BELLVILLE, VILLAGE OF	5	Richland	(SB) Standby	COMM	UNC	(blank)	(blank)	92	ug/l	1	142	142	142
39ROS00007	MEAD PAPER	14	Ross	(IN) Inactive	Non-PWS	UNC	USG (Sand/Gravel)	Scioto River	108	ug/l	8	170	219	420
39ROS00095	CHILLICOTHE WELLFIELD	19	Ross	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Scioto River	89	ug/l	16	259	301	349
39ROS00371	PAINT VALLEY SCHOOL	1	Ross	(AR) Active Rotational	TNC	LS	CDO (Dolostone)	(blank)	104	ug/l	20	59	121	142
39ROS00425	BAINBRIDGE WELLFIELD	4	Ross	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Paint Creek	77	ug/l	18	0	0	0
39ROS00426	FRANKFORT WELLFIELD	3	Ross	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Paint Creek	53	ug/l	21	50	90	138
39ROS08738	CHILLICOTHE WELLFIELD	18	Ross	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Scioto River	0	ug/l	1	340	340	340
39SAN00152	GIBSONBURG WATERWORKS	2	Sandusky	(AO) Active Organic	COMM	LS	CDO (Dolostone)	Lockport Dolomite	300	ug/l	22	0	0	0
39SAN00239	GIBSONBURG WATERWORKS	4	Sandusky	(SB) Standby	COMM	LS	CDO (Dolostone)	Lockport Dolomite	301	ug/l	1	0	0	0
39SAN00406	ERIE ISLANDS PLAZA (OTC)	WEST	Sandusky	(IN) Inactive	TNC	LS	CDO (Dolostone)	Undiff Salina Dolomite	0	ug/l	1	37	37	37
39SCI00072	SCIOTO COUNTY RWA	8	Scioto	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Scioto River	63	ug/l	12	494	570	670
39SCI00270	SCIOTO COUNTY RWA	6	Scioto	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Scioto River	59	ug/l	3	454	473	482
39SEN00022	COLUMBIA GAS LNG	3	Seneca	(IN) Inactive	Non-PWS	LS	CDO (Dolostone)	Tymochtee, Greenfield and Lockport dolomite			2	0	0	0
39SEN00123	BLOOMVILLE WATERWORKS	2	Seneca	(AR) Active Rotational	COMM	LS	CLS (Limestone)	(blank)	165	ug/l	20	0	12	15
39SEN00124	GREEN SPRINGS WELLFIELD	1-7	Seneca	(IN) Inactive	COMM	LS	CDO (Dolostone)	Undiff Salina Dolomite	0	ug/l	12	0	0	0
39SEN00386	GREEN SPRINGS WELLFIELD	3	Seneca	(IN) Inactive	COMM	LS	CDO (Dolostone)	Undiff Salina Dolomite	109	ug/l	7	20	40	101

0 equals ND (<10 ug/l); 0 was used for ND values to calculate average.

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Station ID	Station Name	Well Name	county_name	well_status_desc	pws_type	Lithcode	LithDescription	aquifer_name	Well Depth	Units	Concentrations Sample Count	Min	Avg	Max
39MAD07301	LONDON WELLFIELD	7	Madison	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	London Complex	172	ug/l	4	26	28	34
39MAD07303	MT. STERLING WELLFIELD	3	Madison	(AR) Active Rotational	COMM	LS	CDO (Dolostone)	(blank)	285	ug/l	4	34	62	72
39MAD07305	SOUTH SOLON WELLFIELD	2A	Madison	(SB) Standby	COMM	LS	CDO (Dolostone)	(blank)	220	ug/l	1	21	21	21
39MAH00442	CRAIG BEACH WELLFIELD	5	Mahoning	(IN) Inactive	COMM	SS	CHS (Shale/Sandstone)	(blank)	160	ug/l	22	85	104	127
39MAR00008	BIG ISLAND WILDLIFE AREA	2	Marion	(IN) Inactive	Non-PWS	LS	CDO (Dolostone)	Tymochtee, Greenfield and Lockport dolomite			4	0	45	180
39MAR00128	LA RUE WATERWORKS	1	Marion	(IN) Inactive	COMM	LS	CDO (Dolostone)	Tymochtee and Greenfield Dolomite	136	ug/l	26	0	5	22
39MAR00436	RIDGEDALE HS	SCHOOL	Marion	(AR) Active Rotational	COMM	LS	CDO (Dolostone)	Undiff Salina Dolomite	200	ug/l	17	0	16	275
39MAR08916	LA RUE WATERWORKS	2	Marion	(AS) Active Standard	COMM	LS	CDO (Dolostone)	Tymochtee, Greenfield, and Undiff Salina dolomite	200	ug/l	3	10	10	11
39MED00029	WADSWORTH WELLFIELD	7	Medina	(IN) Inactive	COMM	SS	CSS (Sandstone)	(blank)	227	ug/l	2	820	895	970
39MED00159	LODI WATER DEPARTMENT	5	Medina	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Killbuck Buried Valley	91	ug/l	19	0	24	32
39MED00160	WADSWORTH WELLFIELD	9	Medina	(AR) Active Rotational	COMM	SS	CSS (Sandstone)	(blank)	270	ug/l	17	758	1056	2080
39MED00439	CHIPPEWA LAKE	1	Medina	(AS) Active Standard	TNC	SS	CHS (Shale/Sandstone)	Logan and Black Hand undivided	220	ug/l	26	43	52	64
39MED08381	WADSWORTH WELLFIELD	10A	Medina	(IN) Inactive	COMM	SS	CSS (Sandstone)	(blank)	0	ug/l	1	872	872	872
39MEI00080	SYRACUSE WELLFIELD	3	Meigs	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	(blank)	90	ug/l	15	0	0	0
39MEI02142	MIDDLEPORT WELLFIELD, STU #2	4	Meigs	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Ohio River	68	ug/l	17	0	2	19
39MER00096	COLDWATER WATERWORKS	5	Mercer	(AR) Active Rotational	COMM	LS	CDO (Dolostone)	Salina Group and Lockport Dolomite	241	ug/l	17	20	26	35
39MER00207	COLDWATER WATERWORKS	1	Mercer	(SB) Standby	COMM	LS	CDO (Dolostone)	Salina Group and Lockport Dolomite	245	ug/l	5	31	43	47
39MER00434	ROCKFORD WELLFIELD	1	Mercer	(AR) Active Rotational	COMM	LS	CDO (Dolostone)	Salina Group and Lockport Dolomite	308	ug/l	18	41	57	73
39MIA00055	COVINGTON WELLFIELD	6	Miami	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Stillwater River	144	ug/l	37	31	47	59
39MIA00108	TROY WELLFIELD	17	Miami	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Great Miami River	122	ug/l	2	45	54	62
39MIA00210	TROY WELLFIELD	14	Miami	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Great Miami River	124	ug/l	16	44	68	93
39MIA03216	TROY WELLFIELD	2	Miami	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Great Miami River	125	ug/l	12	45	65	235
39MIA07115	COVINGTON WELLFIELD	9	Miami	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Stillwater River	0	ug/l	1	53	53	53
39MOT00033	ROCK WELL	5	Montgomery	(AS) Active Standard	Non-PWS	LS	CLS (Limestone)	(blank)	40	ug/l	17	0	55	206
39MOT00034	CATALPA GROVE MHP	1	Montgomery	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Great Miami River	40	ug/l	29	0	16	50
39MOT00038	MIAMISBURG WTP	8	Montgomery	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Great Miami River	150	ug/l	36	47	209	323
39MOT00047	TAYLORSVILLE RESERVE	1	Montgomery	(IN) Inactive	TNC	UNC	USG (Sand/Gravel)	Great Miami River	67	ug/l	27	40	141	280
39MOT00061	MONTGOMERY COUNTY/MIAMI SHORES	14	Montgomery	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Great Miami River	160	ug/l	4	238	276	299
39MOT00062	WOLF CREEK SPRING	SP1	Montgomery	(AR) Active Rotational	Non-PWS	UNC	Unknown	(blank)	0	ug/l	7	0	9	62
39MOT00104	DAYTON OTTAWA WELLFIELD	3	Montgomery	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Mad River	135	ug/l	1	160	160	160
39MOT00105	DAYTON MIAMI WELLFIELD	15R	Montgomery	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Great Miami River	165	ug/l	16	45	157	815
39MOT00113	MONTGOMERY COUNTY/MIAMI SHORES	19	Montgomery	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Great Miami River	225	ug/l	19	150	201	226
39MOT00118	NATIONAL CASH REGISTER	1	Montgomery	(IN) Inactive	Non-PWS	UNC	USG (Sand/Gravel)	Great Miami River	205	ug/l	6	55	224	565
39MOT00141	DAYTON OTTAWA WELLFIELD	4R	Montgomery	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Mad River	115	ug/l	26	128	169	202
39MOT00148	MONTGOMERY COUNTY/MIAMI SHORES	15	Montgomery	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Great Miami River	0	ug/l	1	25	25	25
39MOT00251	DAYTON MIAMI WELLFIELD	10R	Montgomery	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Great Miami River	150	ug/l	16	182	215	242
39MOT08900	DAYTON MIAMI WELLFIELD	9R	Montgomery	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Great Miami River	153	ug/l	4	222	232	240
39MRE00025	CLARINGTON WATER DEPT	B	Monroe	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Ohio River	70	ug/l	30	0	0	0
39MRG00079	McCONNELSVILLE WELLFIELD	3	Morgan	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Muskingum River	45	ug/l	5	245	1555	3620
39MRG00451	MALTA WELLFIELD	4	Morgan	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Muskingum River	54	ug/l	30	0	272	369
39MRG02773	STOCKPORT WELLFIELD	2	Morgan	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Muskingum River	76	ug/l	15	0	0	0
39MRG03708	McCONNELSVILLE WELLFIELD	4	Morgan	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Muskingum River	48	ug/l	2	1940	2390	2840
39MRG06044	McCONNELSVILLE WELLFIELD	2	Morgan	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Muskingum River	0	ug/l	2	388	388	388
39MRW00189	MT. GILEAD WELLFIELD	4	Morrow	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Johnstown Complex	126	ug/l	23	39	49	62
39MRW00240	SIMS FERTILIZER	1	Morrow	(IN) Inactive	Non-PWS	SS	CSS (Sandstone)	Sunbury Shale and Berea Sandstone	60	ug/l	7	20	21	25
39MRW00271	SIMS FERTILIZER	2	Morrow	(IN) Inactive	Non-PWS	SS	CSS (Sandstone)	Sunbury Shale and Berea Sandstone	75	ug/l	2	0	45	90
39MUS00031	DRESDEN WELLFIELD	2	Muskingum	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Muskingum River	80	ug/l	4	375	433	560
39MUS00077	DRESDEN WELLFIELD	1	Muskingum	(AO) Active Organic	COMM	UNC	USG (Sand/Gravel)	Muskingum River	85	ug/l	32	293	385	480
39MUS02771	PHILO WELLFIELD	6	Muskingum	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Muskingum River	51	ug/l	1	290	290	290
39MUS03219	ZANESVILLE WELLFIELD	6	Muskingum	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Muskingum River	67.5	ug/l	4	330	598	750
39MUS03685	PHILO WELLFIELD	2	Muskingum	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Muskingum River	40	ug/l	18	0	48	94
39MUS03690	ZANESVILLE WELLFIELD	3	Muskingum	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Muskingum River	69	ug/l	19	23	671	1055
39MUS05492	ADAMSVILLE ELEM SCHOOL	BF	Muskingum	(IN) Inactive	NTNC	SS	CSS (Sandstone)	(blank)	180	ug/l	7	29	421	784
39MUS06034	ZANESVILLE WELLFIELD	9	Muskingum	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Muskingum River	56	ug/l	18	211	585	860
39MUS08774	THE WILDS	1	Muskingum	(AS) Active Standard	TNC	SS	CSH (Shale)	Pennsylvanian Undivided	122	ug/l	19	11	253	1500
39MUS08902	PHILO WELLFIELD	1	Muskingum	(AR) Active Rotational	COMM	(blank)	(blank)	(blank)	0	ug/l	2	91	102	112

0 equals ND (<10 ug/l); 0 was used for ND values to calculate average.

Manganese Levels in Ohio's Ambient (Raw Water) Ground Water Quality Monitoring Network

Station ID	Station Name	Well Name	County Name	Well Status Desc	PWS Type	Lithcode	LithDescription	Aquifer Name	Well Depth	Units	Concentrations Sample Count	Min	Avg	Max
39HRD00127	KENTON PLANT (ROCKWELL INT.)	2	Hardin	(IN) Inactive	COMM	LS	CDO (Dolostone)	Tymochtee, Greenfield and Lockport dolomite			5	15	21	37
39HRD00408	ADA WTP	5	Hardin	(AR) Active Rotational	COMM	LS	CDO (Dolostone)	(blank)	150	ug/l	19	11	17	23
39HRS00428	FREEPORT WELLFIELD	5	Harrison	(AR) Active Rotational	COMM	SS	CSS (Sandstone)	Pennsylvanian Undivided	110	ug/l	16	0	2	39
39HRS02770	BOWERSTON WELLFIELD	1	Harrison	(AS) Active Standard	COMM	SS	CSS (Sandstone)	Pennsylvanian Undivided	140	ug/l	31	136	514	740
39HRS02772	SCIO WELLFIELD	1-2	Harrison	(AS) Active Standard	COMM	SS	CSS (Sandstone)	Pennsylvanian Undivided	90	ug/l	26	77	123	569
39HUR00126	NORTH FAIRFIELD WATERWORKS	2	Huron	(IN) Inactive	COMM	UNC	USD (Sand)	Galion Moraine	45	ug/l	7	154	175	195
39HUR00248	NORTH FAIRFIELD WATERWORKS	1	Huron	(AS) Active Standard	COMM	UNC	USD (Sand)	Galion Moraine	37	ug/l	32	0	206	289
39JAC05497	LAKE KATHERINE NATURE PRESERVE	OFFICE	Jackson	(IN) Inactive	NTNC	SS	CSS (Sandstone)	Allegheny and Pottsville undiv	155	ug/l	16	0	8	25
39JEF00005	MINGO JUNCTION WELLFIELD	1	Jefferson	(AO) Active Organic	COMM	UNC	USG (Sand/Gravel)	Ohio River	71	ug/l	41	636	900	1560
39JEF00427	RICHMOND WELLFIELD	WEST	Jefferson	(IN) Inactive	COMM	SS	CHS (Shale/Sandstone)	Pennsylvanian Undivided	175	ug/l	5	50	75	91
39KNO00190	MT. VERNON WELLFIELD	8	Knox	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Kokosing Buried Valley	97.6	ug/l	20	94	107	117
39KNO00191	STONE COUNTRY WATER CO	1	Knox	(IN) Inactive	COMM	SS	CSS (Sandstone)	Logan and Black Hand undivided	180	ug/l	14	50	84	120
39KNO00229	DANVILLE WELLFIELD	1	Knox	(IN) Inactive	COMM	SS	CSS (Sandstone)	Logan and Black Hand undivided	235	ug/l	2	166	175	184
39KNO00230	FREDERICKTOWN WELLFIELD	1	Knox	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Kokosing Buried Valley	122	ug/l	2	175	178	181
39KNO00259	AMERICAN CAN WELLFIELD	7	Knox	(IN) Inactive	Non-PWS	UNC	USG (Sand/Gravel)	Kokosing Buried Valley	96	ug/l	4	80	93	100
39KNO00279	FREDERICKTOWN WELLFIELD	2	Knox	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Kokosing Buried Valley	133	ug/l	24	179	205	228
39KNO00392	MARTINSBURG WELLFIELD	3	Knox	(AS) Active Standard	COMM	SS	CSS (Sandstone)	Logan and Black Hand undivided	300	ug/l	20	0	4	24
39KNO07257	DANVILLE WELLFIELD	3	Knox	(IN) Inactive	COMM	SS	CSS (Sandstone)	Logan and Black Hand undivided	250	ug/l	22	31	62	141
39KNO08910	DANVILLE WELLFIELD	5	Knox	(AS) Active Standard	COMM	SS	CSS (Sandstone)	Logan and Black Hand undivided	345	ug/l	6	61	107	137
39LAW00074	SOUTH POINT WELLFIELD	2	Lawrence	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Ohio River	86	ug/l	20	74	101	140
39LAW02775	IRONTON IRON	7	Lawrence	(IN) Inactive	Non-PWS	UNC	USG (Sand/Gravel)	Ohio River	84	ug/l	15	230	3743	8440
39LAW02787	PROCTORVILLE WELLFIELD	EAST	Lawrence	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Ohio River	58	ug/l	4	495	512	529
39LAW02788	PROCTORVILLE WELLFIELD	WEST	Lawrence	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Ohio River	53	ug/l	19	328	415	532
39LAW03213	IRONTON IRON	6	Lawrence	(IN) Inactive	Non-PWS	UNC	USG (Sand/Gravel)	Ohio River	80	ug/l	3	950	4260	10880
39LIC00006	PATASKALA WELLFIELD, STU 1	6	Licking	(AO) Active Organic	COMM	UNC	USG (Sand/Gravel)	South Fork Licking River	103	ug/l	29	17	23	29
39LIC00017	HEATH WELLFIELD	4	Licking	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	South Fork Licking River	195	ug/l	6	120	150	175
39LIC00185	HEATH WELLFIELD	5	Licking	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	South Fork Licking River	230	ug/l	26	92	184	260
39LIC00194	ETNA SCHOOL WELLFIELD	1	Licking	(IN) Inactive	TNC	SS	CSS (Sandstone)	Cuyahoga Group	250	ug/l	2	93	108	122
39LIC00221	HEBRON WELLFIELD	1	Licking	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	South Fork Licking River	155	ug/l	30	83	107	143
39LIC00222	JOHNSTOWN WELLFIELD	4	Licking	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Johnstown-Groveport	300	ug/l	3	90	95	105
39LIC00223	UTICA WELLFIELD	4	Licking	(IN) Inactive	COMM	SS	CSS (Sandstone)	Cuyahoga Group	350	ug/l	5	0	0	0
39LIC00224	VALLEY MHP	1	Licking	(AR) Active Rotational	NTNC	UNC	USG (Sand/Gravel)	Licking River	206	ug/l	25	71	93	147
39LIC00246	GRANVILLE WELLFIELD	2	Licking	(AO) Active Organic	COMM	UNC	USG (Sand/Gravel)	North Fork Licking River	92	ug/l	34	96	143	167
39LIC00264	HOPEWELL ELEMENTARY SCHOOL	OLD	Licking	(IN) Inactive	TNC	SS	CSS (Sandstone)	Logan and Black Hand undivided	0	ug/l	13	57	64	74
39LIC00380	UTICA WELLFIELD	5	Licking	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	North Fork Licking River	144	ug/l	24	186	204	223
39LIC07112	VALLEY MHP	2	Licking	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Licking River	208	ug/l	1	88	88	88
39LIC07304	PATASKALA WELLFIELD, STU 1	5	Licking	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	South Fork Licking River	108	ug/l	5	20	25	32
39LIC08737	HOPEWELL ELEMENTARY SCHOOL	1	Licking	(AR) Active Rotational	NTNC	SS	CSS (Sandstone)	Logan and Black Hand undivided	305	ug/l	12	0	19	186
39LIC08917	PATASKALA WELLFIELD, STU 1	8	Licking	(AO) Active Organic	COMM	UNC	USG (Sand/Gravel)	South Fork Licking River	88	ug/l	3	21	25	27
39LOG00042	TRANSPORATION RESEARCH CENTER (TR	2	Logan	(AR) Active Rotational	NTNC	LS	CDO (Dolostone)	(blank)	240	ug/l	31	0	61	131
39LOG00043	ZANESFIELD R&G CLUB	1	Logan	(IN) Inactive	TNC	UNC	USG (Sand/Gravel)	Mad River	140	ug/l	11	0	1	10
39LOG00060	WEST LIBERTY WELLFIELD	1	Logan	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Mad River	70	ug/l	36	20	35	60
39LOG00422	RUSSELLS POINT WELLFIELD	3	Logan	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Great Miami River	85	ug/l	16	45	102	118
39LOG02861	RUSSELLS POINT WELLFIELD	2	Logan	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Great Miami River	95	ug/l	1	57	57	57
39LOG05673	WEST LIBERTY WELLFIELD	2	Logan	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Mad River	69	ug/l	2	35	35	35
39LOG08770	RUSSELLS POINT WELLFIELD	4	Logan	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Great Miami River	0	ug/l	1	102	102	102
39LUC00023	NONA FRANCE PARK	1	Lucas	(IN) Inactive	TNC	LS	CLS (Limestone)	Traverse, Dundee, Detroit River	133	ug/l	1	0	0	0
39LUC00138	COLLINGWOOD WATER SUPPLY CORP	1	Lucas	(IN) Inactive	Non-PWS	(blank)	CLS (Limestone)	(blank)	522	ug/l	11	0	12	20
39LUC00140	WHITEHOUSE WATERWORKS	5	Lucas	(IN) Inactive	COMM	LS	CLS (Limestone)	(blank)	170	ug/l	17	0	8	22
39LUC00384	SECOR METRO PARK	WALNUT GR	Lucas	(IN) Inactive	TNC	LS	CLS (Limestone)	Traverse, Dundee, Detroit River	90	ug/l	8	11	16	20
39MAD00196	LONDON WELLFIELD	8	Madison	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	London Complex	165	ug/l	14	26	32	46
39MAD00226	PLAIN CITY WELLFIELD	2	Madison	(AR) Active Rotational	COMM	LS	CDO (Dolostone)	(blank)	387	ug/l	24	10	27	41
39MAD00228	SOUTH SOLON WELLFIELD	1	Madison	(AR) Active Rotational	COMM	LS	CDO (Dolostone)	(blank)	225	ug/l	25	24	29	52
39MAD00261	DEERCREEK SCHOOL WELLFIELD	1	Madison	(IN) Inactive	TNC	UNC	UGR (Gravel)	Prairie Complex	47	ug/l	2	47	54	60
39MAD00276	MT. STERLING WELLFIELD	1	Madison	(SB) Standby	COMM	LS	CDO (Dolostone)	(blank)	285	ug/l	23	60	73	87
39MAD00387	PLAIN CITY WELLFIELD	1	Madison	(SB) Standby	COMM	LS	CDO (Dolostone)	(blank)	377	ug/l	3	15	31	42

0 equals ND (<10 ug/l); 0 was used for ND values to calculate average.

Manganese Levels in Ohio's Ambient (Raw Water) Ground Water Quality Monitoring Network

Station ID	Station Name	Well Name	county_name	well_status_desc	pws_type	Lithcode	LithDescription	aquifer_name	Well Depth	Units	Concentrations Sample Count	Min	Avg	Max
39FUL08890	MAUMEE STATE FOREST HQ	1	Fulton	(AS) Active Standard	Non-PWS	UNC	USD (Sand)	(blank)	25	ug/l	10	11	21	36
39FUL08891	WHITE PINES GOLF COURSE	1	Fulton	(AS) Active Standard	TNC	(blank)	CSH (Shale)	(blank)	210	ug/l	4	0	78	243
39FUL08920	FAYETTE WATERWORKS	4	Fulton	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Williams Complex	194	ug/l	2	18	20	21
39GAL00030	GALLIA CO. AIRPORT	1	Gallia	(IN) Inactive	Non-PWS	UNC	USG (Sand/Gravel)	Ohio River	60	ug/l	20	60	81	105
39GAL02560	GALLIA CO RWA	4	Gallia	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Ohio River	66	ug/l	9	17	27	52
39GEA00198	ASM INTERNATIONAL	2	Geauga	(AS) Active Standard	Non-PWS	SS	CHS (Shale/Sandstone)	Massillon through Sharon formations	138	ug/l	32	0	65	170
39GEA00444	MIDDLEFIELD WELLFIELD	1	Geauga	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Cuyahoga Buried Valley	104	ug/l	26	47	54	60
39GEA00446	TANGLEWOOD LAKE WATER COMPANY	9	Geauga	(AS) Active Standard	Non-PWS	SS	CSS (Sandstone)	Cuyahoga Group	159	ug/l	23	0	8	26
39GEA06130	MIDDLEFIELD WELLFIELD	2	Geauga	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Cuyahoga Buried Valley	84	ug/l	1	60	60	60
39GEA08750	ASM INTERNATIONAL	1	Geauga	(SB) Standby	COMM	SS	CHS (Shale/Sandstone)	Massillon through Sharon formations	150	ug/l	1	0	0	0
39GRE00039	YELLOW SPRINGS WELLFIELD	1	Greene	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Little Miami River	82	ug/l	14	105	183	275
39GRE00044	CARTER JONES LUMBER	1	Greene	(IN) Inactive	COMM	UNC	UGR (Gravel)	Beaver Creek	145	ug/l	11	345	371	400
39GRE00045	WRIGHT STATE UNIVERSITY	1	Greene	(IN) Inactive	Non-PWS	UNC	USG (Sand/Gravel)	Mad River	109	ug/l	1	80	80	80
39GRE00049	SPRING VALLEY WELLFIELD, STU 2	2	Greene	(IN) Inactive	COMM	UNC	UGR (Gravel)	Little Miami River	53	ug/l	15	120	167	204
39GRE00111	XENIA-FORD ROAD WWTP	1	Greene	(IN) Inactive	Non-PWS	UNC	USG (Sand/Gravel)	Little Miami River	67	ug/l	31	0	166	300
39GRE00143	WRIGHT STATE UNIVERSITY	2	Greene	(IN) Inactive	Non-PWS	UNC	USG (Sand/Gravel)	Mad River	116	ug/l	8	85	152	460
39GRE00150	YELLOW SPRINGS WELLFIELD	2	Greene	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Little Miami River	81.6	ug/l	36	251	297	394
39GRE00372	GREENE CO SWR WELLFIELD	SWR1	Greene	(AS) Active Standard	Non-PWS	UNC	USG (Sand/Gravel)	Little Miami River	55	ug/l	16	0	0	0
39GRE00398	GREENE CO SWR WELLFIELD	SWR2	Greene	(SB) Standby	Non-PWS	UNC	USG (Sand/Gravel)	Little Miami River	49.5	ug/l	2	0	0	0
39GUE00091	BYESVILLE WELLFIELD	1	Guernsey	(IN) Inactive	COMM	SS	CHS (Shale/Sandstone)	Allegheny and Pottsville undiv	0	ug/l	31	184	294	545
39GUE00092	KIMBOLTON WELLFIELD	7	Guernsey	(IN) Inactive	COMM	SS	CHS (Shale/Sandstone)	Allegheny and Pottsville undiv	100	ug/l	4	25	136	400
39GUE00093	PLEASANT CITY WELLFIELD	2	Guernsey	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Wills Creek	50	ug/l	30	47	56	90
39GUE08923	BYESVILLE WELLFIELD	2	Guernsey	(AS) Active Standard	COMM	SS	CHS (Shale/Sandstone)	Pennsylvanian undivided, and Allegheny and upper	0	ug/l	2	95	106	116
39HAM00036	ACOE-MARIEMONT	4	Hamilton	(IN) Inactive	Non-PWS	UNC	USG (Sand/Gravel)	Little Miami River	40	ug/l	4	10	114	375
39HAM00041	SWR WATER DISTRICT SOUTH PLANT	1	Hamilton	(AR) Active Rotational	Non-PWS	UNC	USG (Sand/Gravel)	Great Miami River	82	ug/l	27	190	323	1970
39HAM00053	NORWOOD WELLFIELD	1	Hamilton	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Norwood Trough	200	ug/l	6	540	755	1020
39HAM00056	MIAMI WHITERWATER FOREST	1	Hamilton	(IN) Inactive	TNC	UNC	USG (Sand/Gravel)	Whitewater River	82	ug/l	19	0	47	527
39HAM00057	BRIGHTON MOSTELLER PLANT	2	Hamilton	(IN) Inactive	Non-PWS	UNC	USG (Sand/Gravel)	Mill Creek	70	ug/l	6	715	803	1140
39HAM00058	FORT HILL DUPONT PLANT	50	Hamilton	(IN) Inactive	Non-PWS	UNC	USG (Sand/Gravel)	Ohio River	85	ug/l	6	230	353	740
39HAM00059	HOME CITY ICE	1	Hamilton	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Ohio River	103	ug/l	8	110	158	275
39HAM00064	LOVELAND WELLFIELD	2	Hamilton	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Little Miami River	70	ug/l	3	0	0	0
39HAM00089	LOVELAND WELLFIELD	5	Hamilton	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Little Miami River	81	ug/l	24	0	15	210
39HAM00122	LOCKLAND WTP	8	Hamilton	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Mill Creek	199	ug/l	15	60	96	198
39HAM00257	CLEVES WELLFIELD	3	Hamilton	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Great Miami River	64	ug/l	1	49	49	49
39HAM00380	LOCKLAND WTP	6	Hamilton	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Mill Creek	201	ug/l	16	85	97	119
39HAM08769	LOCKLAND WTP	5	Hamilton	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Mill Creek	200	ug/l	1	116	116	116
39HAN00132	CENTREX CORP.	1&2	Hancock	(IN) Inactive	Non-PWS	LS	CDO (Dolostone)	Tymochtee, Greenfield and Lockport dolomite			11	25	68	133
39HAN00383	RIVERDALE HS	1	Hancock	(AR) Active Rotational	NTNC	LS	CDO (Dolostone)	Tymochtee, Greenfield and Lockport dolomite			16	0	0	0
39HEN00121	HOLGATE WATERWORKS	2	Henry	(AR) Active Rotational	COMM	LS	CLS (Limestone)	(blank)	310	ug/l	19	0	4	20
39HIG00418	HIGHLAND COUNTY WATER COMPANY	4	Highland	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Paint Creek	62	ug/l	19	26	231	302
39HIG06929	HIGHLAND COUNTY WATER COMPANY	5	Highland	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Paint Creek	94	ug/l	2	168	229	290
39HOC00001	HIDE-A-WAY HILLS LODGE	1	Hocking	(IN) Inactive	NTNC	SS	CSS (Sandstone)	Logan and Black Hand undivided	215	ug/l	7	40	260	1320
39HOC00010	HOCKING VALLEY CONCRETE	2	Hocking	(IN) Inactive	Non-PWS	UNC	USG (Sand/Gravel)	Hocking River	25	ug/l	10	60	203	305
39HOC00081	EGP, INC.	1	Hocking	(AR) Active Rotational	Non-PWS	SS	CSS (Sandstone)	Logan and Black Hand undivided	375	ug/l	20	0	14	23
39HOC00082	LOGAN WELLFIELD	G	Hocking	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Hocking River	65	ug/l	11	190	292	359
39HOC00083	ROCKBRIDGE POST OFFICE	1	Hocking	(AR) Active Rotational	NTNC	UNC	USG (Sand/Gravel)	Hocking River	68	ug/l	34	165	204	234
39HOC00399	LOGAN WELLFIELD	B	Hocking	(SB) Standby	Non-PWS	UNC	USG (Sand/Gravel)	Hocking River	63	ug/l	22	307	348	451
39HOC08901	LETO'S RIDGE	1	Hocking	(AS) Active Standard	Non-PWS	SS	CSS (Sandstone)	Logan and Black Hand undivided	345	ug/l	10	29	39	97
39HOC08909	LOGAN WELLFIELD	C	Hocking	(AS) Active Standard	COMM	UNC	USD (Sand)	Hocking River	0	ug/l	7	274	347	394
39HOL00026	RotoSolutions (COMPAK/DATACARD)	1	Holmes	(SB) Standby	Non-PWS	UNC	USG (Sand/Gravel)	Killbuck Buried Valley	130	ug/l	3	0	17	50
39HOL00177	RotoSolutions (COMPAK/DATACARD)	MAIN	Holmes	(AO) Active Organic	Non-PWS	UNC	USG (Sand/Gravel)	Killbuck Buried Valley	90	ug/l	22	16	82	574
39HOL00179	KILLBUCK WELLFIELD	1	Holmes	(AR) Active Rotational	COMM	SS	CSS (Sandstone)	Logan and Black Hand undivided	200	ug/l	26	547	626	685
39HOL00180	MILLERSBURG WELLFIELD	2	Holmes	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Killbuck Buried Valley	90	ug/l	1	150	150	150
39HOL00241	KILLBUCK WELLFIELD	2	Holmes	(SB) Standby	COMM	SS	CSS (Sandstone)	Logan and Black Hand undivided	0	ug/l	2	529	572	615
39HOL00242	MILLERSBURG WELLFIELD	3	Holmes	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Killbuck Buried Valley	93	ug/l	23	0	20	36
39HRD00084	SYPRIS	3	Hardin	(IN) Inactive	Non-PWS	LS	CDO (Dolostone)	Tymochtee, Greenfield and Lockport dolomite			22	30	46	100

0 equals ND (<10 ug/l); 0 was used for ND values to calculate average.

Manganese Levels in Ohio's Ambient (Raw Water) Ground Water Quality Monitoring Network

Station ID	Station Name	Well Name	County Name	Well Status desc	pws type	lithocode	LithDescription	aquifer name	Well Depth	Units	Concentrations Sample Count	Min	Avg	Max
39CLE00146	NEW RICHMOND WELLFIELD	3	Clermont	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Ohio River	86	ug/l	6	500	768	970
39CLE00420	PIERCE UNION BATAVIA WELLFIELD	16	Clermont	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Ohio River	91	ug/l	21	83	123	177
39CLE06047	PIERCE UNION BATAVIA WELLFIELD	18	Clermont	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Ohio River	92	ug/l	2	0	129	258
39CLE06640	PIERCE UNION BATAVIA WELLFIELD	6	Clermont	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Ohio River	0	ug/l	1	20	20	20
39CLI00417	SABINA WELLFIELD	10	Clinton	(AR) Active Rotational	COMM	LS	CDO (Dolostone)	(blank)	110	ug/l	22	14	33	300
39COL00396	LISBON WELLFIELD	5	Columbiana	(AS) Active Standard	COMM	SS	CSS (Sandstone)	Allegheny and Pottsville undiv	100	ug/l	26	175	335	1890
39COL00443	EAST PALESTINE WELLFIELD	RHODES	Columbiana	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Little Beaver Creek	75	ug/l	21	417	452	482
39COL08908	LISBON WELLFIELD	6	Columbiana	(SB) Standby	COMM	SS	CSS (Sandstone)	Allegheny and Pottsville undiv	0	ug/l	1	223	223	223
39COL08914	COLUMBIANA PWS	4	Columbiana	(AS) Active Standard	COMM	SS	CSS (Sandstone)	Cuyahoga Group	265	ug/l	6	179	248	275
39COL08915	COLUMBIANA PWS	8	Columbiana	(AS) Active Standard	COMM	SS	CSS (Sandstone)	Cuyahoga Group	410	ug/l	4	157	166	170
39COS00016	CSOE-CONESVILLE STATION	2	Coshocton	(IN) Inactive	Non-PWS	UNC	USG (Sand/Gravel)	Muskingum River	92	ug/l	13	670	3338	6550
39COS00086	COSHOCTON WELLFIELD	6	Coshocton	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Tuscarawas River	82	ug/l	21	150	250	300
39COS00088	WEST LAFAYETTE WELLFIELD	1	Coshocton	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Tuscarawas River	120	ug/l	4	260	310	350
39COS00203	WEST LAFAYETTE WELLFIELD	2	Coshocton	(AO) Active Organic	COMM	UNC	USG (Sand/Gravel)	Tuscarawas River	120	ug/l	35	105	654	5130
39COS00373	USDA FIELD STATION	2	Coshocton	(AR) Active Rotational	Non-PWS	SS	CHS (Shale/Sandstone)	Allegheny and Pottsville undiv	222	ug/l	22	1260	1538	1910
39COS05479	WEST LAFAYETTE WELLFIELD	3	Coshocton	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Tuscarawas River	152	ug/l	1	690	690	690
39DAR00035	ARCANUM WATER & LIGHT	2	Darke	(IN) Inactive	COMM	UNC	MUC (USG + CDO)	Stillwater River	29	ug/l	23	50	68	97
39DAR00054	ANSONIA VILLAGE	1	Darke	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Stillwater River	84.5	ug/l	7	35	47	60
39DAR00381	ARCANUM WATER & LIGHT	5	Darke	(IN) Inactive	COMM	LS	CDO (Dolostone)	Lockport Dolomite	83	ug/l	8	85	105	125
39DAR00413	UNION CITY WELLFIELD	5	Darke	(IN) Inactive	COMM	LS	CDO (Dolostone)	Lockport Dolomite	268	ug/l	19	22	25	35
39DAR00414	UNION CITY WELLFIELD	2	Darke	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Union City Moraine	80	ug/l	20	43	52	62
39DAR00424	NEW MADISON WELLFIELD	1	Darke	(AR) Active Rotational	COMM	LS	CDO (Dolostone)	Lockport Dolomite	166	ug/l	21	83	100	126
39DAR08899	ARCANUM WATER & LIGHT	4	Darke	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	(blank)	42	ug/l	8	103	136	184
39DEF00103	HICKSVILLE WATERWORKS	2	Defiance	(IN) Inactive	COMM	LS	CLS (Limestone)	Traverse, Dundee, Detroit River	188	ug/l	3	0	0	0
39DEF00197	HICKSVILLE WATERWORKS	3	Defiance	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Williams Complex	178	ug/l	19	0	4	40
39DEL00199	GARTH'S AUCTION BARN	1	Delaware	(IN) Inactive	TNC	LS	CLS (Limestone)	Delaware and Columbus Limestone	45	ug/l	2	86	87	87
39DEL00269	ASHLEY WELLFIELD	1	Delaware	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Alum Creek	28	ug/l	21	151	240	312
39DEL00405	MORNING VIEW CARE CENTER	2	Delaware	(IN) Inactive	NTNC	SS	CSS (Sandstone)	Berea Sandstone	140	ug/l	2	43	43	43
39ERI00260	MILAN WATERWORKS	5	Erie	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Norwalk Buried Valley	152	ug/l	22	0	22	45
39ERI05449	CASTALIA (OTC)	MB4	Erie	(IN) Inactive	TNC	LS	CDO (Dolostone)	(blank)	150	ug/l	13	0	9	120
39FAI00195	LANCASTER WELLFIELD	28	Fairfield	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Hocking River	104	ug/l	19	134	191	241
39FAI00220	BREMEN WELLFIELD	2	Fairfield	(AO) Active Organic	COMM	UNC	USG (Sand/Gravel)	Rush Creek	60	ug/l	35	45	112	125
39FAI00247	SUGAR GROVE WELLFIELD	4	Fairfield	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Hocking River	57	ug/l	34	46	124	213
39FAI00262	DEED'S DAIRY	114	Fairfield	(IN) Inactive	Non-PWS	UNC	USG (Sand/Gravel)	Hocking River	25	ug/l	2	0	0	0
39FAI00274	CARROLL WELLFIELD	1	Fairfield	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Hocking River	74	ug/l	25	0	2	11
39FAI00277	AMANDA WELLFIELD	1	Fairfield	(IN) Inactive	COMM	SS	CSS (Sandstone)	Cuyahoga Group	80	ug/l	2	29	77	124
39FAI00278	BALTIMORE WELLFIELD	1	Fairfield	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Baltimore Buried Valley	175	ug/l	19	181	192	211
39FAI07111	SUGAR GROVE WELLFIELD	5	Fairfield	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Hocking River	58	ug/l	3	110	144	161
39FAI08913	BREMEN WELLFIELD	5	Fairfield	(AO) Active Organic	COMM	UNC	USG (Sand/Gravel)	Rush Creek	67	ug/l	4	124	133	142
39FAY00020	ARMCO STEEL CORP2	1	Fayette	(IN) Inactive	Non-PWS	UNC	MUC (USG + CDO)	Esboro Moraine and Lockport Dolomite	215	ug/l	2	85	108	130
39FAY00214	WASHINGTON CH WELLFIELD	11	Fayette	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Paint Creek	47	ug/l	31	125	403	679
39FAY00267	MCDONALD'S RESTAURANT	1	Fayette	(IN) Inactive	TNC	LS	CDO (Dolostone)	(blank)	102	ug/l	2	12	13	13
39FAY00374	WASHINGTON CH WELLFIELD	8	Fayette	(AS) Active Standard	COMM	LS	CDO (Dolostone)	Lockport Dolomite	200	ug/l	25	13	51	578
39FRA00066	ASHLAND CHEMICAL	1	Franklin	(AR) Active Rotational	COMM	LS	CLS (Limestone)	(blank)	155	ug/l	22	33	39	45
39FRA00225	BATTELLE DARBY METRO PARK	3	Franklin	(AR) Active Rotational	Non-PWS	LS	CDO (Dolostone)	Undiff Salina Dolomite	55	ug/l	25	22	36	74
39FRA00233	GROVEPORT WELLFIELD	2	Franklin	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Baltimore Buried Valley	96	ug/l	21	34	44	49
39FRA00234	JEFFERSON WATER & SEWER DISTRICT	1	Franklin	(AO) Active Organic	COMM	UNC	USG (Sand/Gravel)	Big Walnut Buried Valley	74	ug/l	33	74	119	148
39FRA00235	OBETZ WELLFIELD	S1	Franklin	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	East Columbus Buried Valley	125	ug/l	30	53	60	70
39FRA00236	MYERS RESIDENCE	1	Franklin	(AR) Active Rotational	Non-PWS	SS	CSS (Sandstone)	Cuyahoga Group	50	ug/l	27	55	88	114
39FRA00402	COLUMBUS SOUTH WELLFIELD	101	Franklin	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Scioto River	78	ug/l	26	152	234	286
39FRA00403	COLUMBUS SOUTH WELLFIELD	103	Franklin	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Scioto River	111	ug/l	1	168	168	168
39FRA00404	STRAWSER & ALLEN PARTNERSHIP	1	Franklin	(AS) Active Standard	COMM	LS	(blank)	(blank)	85	ug/l	27	87	114	207
39FRA07113	JEFFERSON WATER & SEWER DISTRICT	2	Franklin	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Big Walnut Buried Valley	73	ug/l	1	121	121	121
39FRA07114	OBETZ WELLFIELD	N1	Franklin	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	East Columbus Buried Valley	125	ug/l	2	59	61	63
39FRA08892	GROVEPORT WELLFIELD	3	Franklin	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Baltimore Buried Valley	106	ug/l	12	23	36	42
39FUL00101	FAYETTE WATERWORKS	1	Fulton	(IN) Inactive	COMM	UNC	UGR (Gravel)	Williams Complex	47	ug/l	19	0	88	139

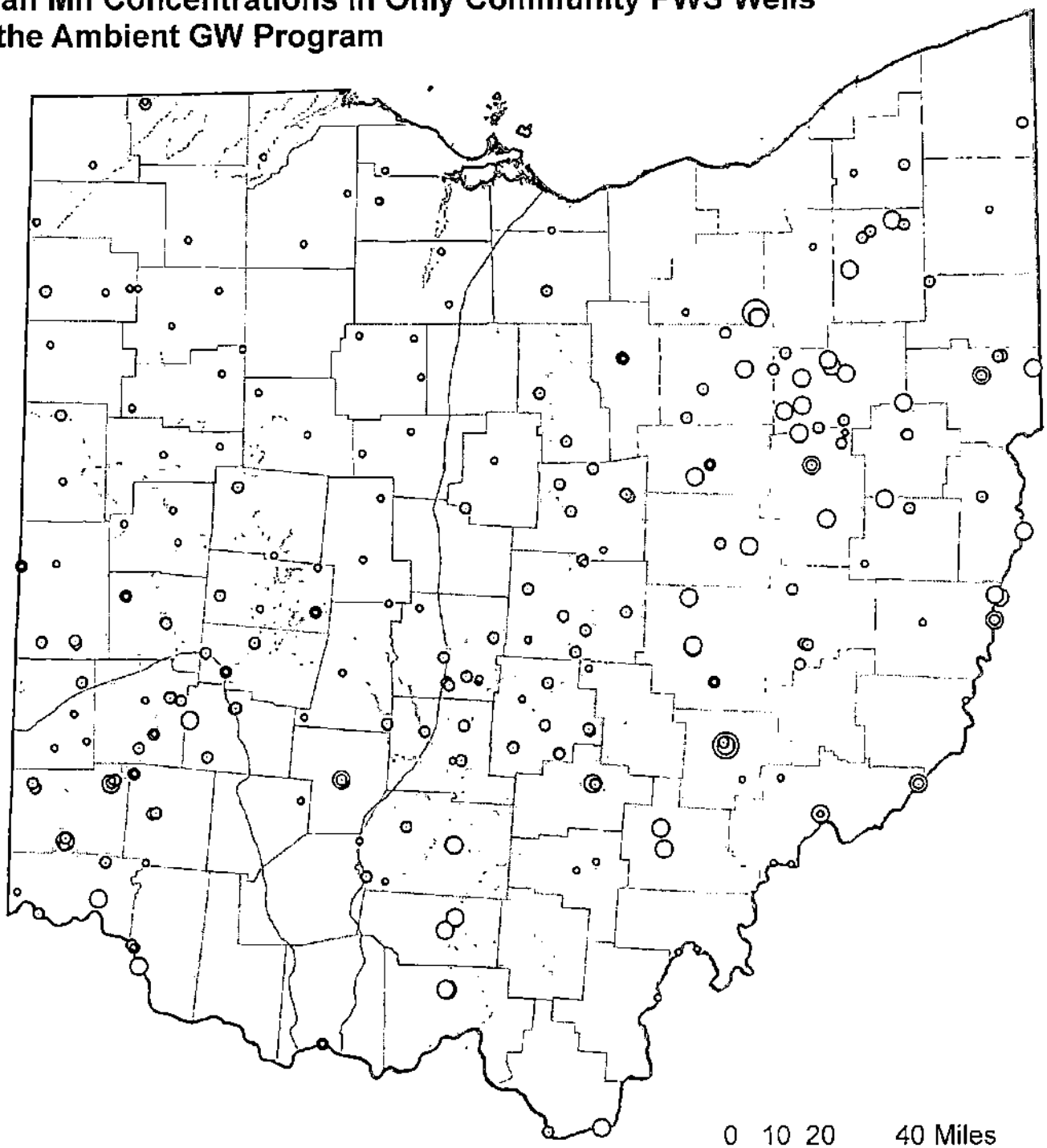
0 equals ND (<10 ug/l); 0 was used for ND values to calculate average.

Manganese Levels in Ohio's Ambient (Raw Water) Ground Water Quality Monitoring Network

Station ID	Station Name	Well Name	county_name	well_status_desc	pws_type	Lithcode	LithDescription	aquifer_name	Well Depth	Units	Concentrations Sample Count	Min	Avg	Max
39ADA00070	ADAMS COUNTY WATER CO.	4	Adams	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Ohio River	66	ug/l	11	0	5	12
39ADA00217	ADAMS COUNTY WATER CO.	1	Adams	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Ohio River	0	ug/l	2	65	92	119
39ALL00130	BLUFFTON SOUTH WTP	3	Allen	(IN) Inactive	COMM	LS	CDO (Dolostone)	(blank)	100	ug/l	4	0	0	0
39ALL00153	SPENCERVILLE WELLFIELD	3	Allen	(SB) Standby	COMM	LS	CLS (Limestone)	Tymochtee, Greenfield and Lockport dolomite			4	0	8	13
39ALL00184	SPENCERVILLE WELLFIELD	1	Allen	(AR) Active Rotational	COMM	LS	CDO (Dolostone)	Tymochtee, Greenfield and Lockport dolomite			20	0	9	14
39ALL00407	GOMER ELEMENTARY SCHOOL	SCHOOL	Allen	(IN) Inactive	NTNC	LS	CDO (Dolostone)	(blank)	280	ug/l	7	0	0	0
39ALL08882	BLUFFTON SOUTH WTP	1	Allen	(IN) Inactive	COMM	LS	CDO (Dolostone)	(blank)	340	ug/l	14	0	23	63
39ALL08919	BEAVERDAM, VILLAGE OF	3	Allen	(AS) Active Standard	COMM	LS	CLD (Limestone + Dolostone)	(blank)	435	ug/l	3	10	11	12
39ASH00135	ASHLAND WTP	1	Ashland	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Mohican River	91	ug/l	8	100	162	225
39ASH00136	ASHLAND WTP	5	Ashland	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Mohican River	97	ug/l	23	0	4	11
39ASH00149	MANSFIELD PLUMBING PRODUCTS	1	Ashland	(IN) Inactive	Non-PWS	UNC	USG (Sand/Gravel)	Mohican River	84	ug/l	16	65	170	404
39ASH00183	ASHLAND WTP	4	Ashland	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Mohican River	325	ug/l	19	0	77	140
39ATB00401	ANDOVER WTP	7	Ashtabula	(AR) Active Rotational	COMM	SS	CSS (Sandstone)	Bedford Shale, Cussewago Sands	73	ug/l	24	12	167	357
39ATH00024	ATHENS, CITY OF	2A	Athens	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Hocking River	52	ug/l	48	0	614	1010
39ATH00078	CHAUNCEY WELLFIELD	1	Athens	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Hocking River	50	ug/l	1	360	360	360
39ATH00147	CHAUNCEY WELLFIELD	2	Athens	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Hocking River	57	ug/l	24	28	406	537
39AUG00098	WAPAKONETA WATERWORKS	1	Auglaize	(AR) Active Rotational	COMM	LS	CDO (Dolostone)	Tymochtee, Greenfield and Lockport dolomite			20	10	22	42
39AUG00433	WAYNESFIELD WELLFIELD	2	Auglaize	(AR) Active Rotational	COMM	LS	CDO (Dolostone)	(blank)	245	ug/l	22	14	17	18
39AUG08907	WAPAKONETA WATERWORKS	2	Auglaize	(SB) Standby	COMM	LS	CLD (Limestone + Dolostone)	Lockport Dolomite	268	ug/l	1	31	31	31
39BEL00114	BELMONT COUNTY SANITARY DISTRICT	1	Belmont	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Ohio River	73	ug/l	43	146	235	460
39BEL00151	BELMONT COUNTY SANITARY DISTRICT	3	Belmont	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Ohio River	75	ug/l	2	311	331	350
39BEL00452	MARTINS FERRY WELLFIELD	9	Belmont	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Ohio River	0	ug/l	9	619	892	1180
39BEL08881	MARTINS FERRY WELLFIELD	13	Belmont	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Ohio River	69	ug/l	18	609	866	1120
39BRO00419	BROWN COUNTY RWA	5	Brown	(AR) Active Rotational	Non-PWS	UNC	USG (Sand/Gravel)	Ohio River	65	ug/l	20	23	38	58
39BRO07020	BROWN COUNTY RWA	6	Brown	(SB) Standby	Non-PWS	UNC	USG (Sand/Gravel)	Ohio River	86	ug/l	1	35	35	35
39BUT00040	CHAMPION PAPER MILL	4	Butler	(IN) Inactive	Non-PWS	UNC	USG (Sand/Gravel)	Great Miami River	216	ug/l	13	0	2	30
39BUT00051	OXFORD WELLFIELD	1	Butler	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Four Mile	55	ug/l	36	0	83	142
39BUT00065	MILLER BREWING COMPANY	3	Butler	(IN) Inactive	Non-PWS	UNC	USG (Sand/Gravel)	Great Miami River	218	ug/l	5	45	130	205
39BUT00117	MIDDLETOWN PAPERBOARD	1	Butler	(IN) Inactive	Non-PWS	UNC	USG (Sand/Gravel)	Great Miami River	140	ug/l	9	415	509	650
39BUT00119	MILLER BREWING COMPANY	2	Butler	(IN) Inactive	Non-PWS	UNC	USG (Sand/Gravel)	Great Miami River	202	ug/l	1	155	155	155
39BUT00155	MIDDLETOWN WELLFIELD	17	Butler	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Great Miami River	147	ug/l	19	176	286	351
39BUT00244	MIDDLETOWN WELLFIELD	18	Butler	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Great Miami River	146	ug/l	10	108	270	746
39BUT00252	MIDDLETOWN WELLFIELD	6	Butler	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Great Miami River	178	ug/l	7	252	279	315
39BUT00375	HAMILTON SOUTH WELLFIELD	FW3	Butler	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Great Miami River	169	ug/l	28	198	287	433
39BUT06046	MIDDLETOWN WELLFIELD	3	Butler	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Great Miami River	0	ug/l	1	347	347	347
39BUT07116	HAMILTON SOUTH WELLFIELD	6	Butler	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Great Miami River	0	ug/l	2	156	162	167
39BUT08633	MIDDLETOWN WELLFIELD	12	Butler	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Great Miami River	49	ug/l	2	0	0	0
39BUT08646	FAIRFIELD WELLFIELD	6	Butler	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	(blank)	164	ug/l	2	389	389	389
39BUT08911	OXFORD WELLFIELD	2	Butler	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Four Mile	0	ug/l	7	79	119	146
39CAR00169	CARROLLTON WELLFIELD	1	Carroll	(SB) Standby	COMM	SS	CHS (Shale/Sandstone)	Pennsylvanian Undivided	135	ug/l	15	27	84	175
39CAR08903	CARROLLTON WELLFIELD	2	Carroll	(AS) Active Standard	COMM	SS	(blank)	(blank)	0	ug/l	9	85	137	163
39CHA00052	URBANA WELLFIELD-OLD TROY PIKE	9	Champaign	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Mad River	62	ug/l	15	0	24	81
39CHA00109	URBANA WELLFIELD-OLD TROY PIKE	8	Champaign	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Mad River	63	ug/l	31	0	3	55
39CHA00409	ST PARIS WELLFIELD, STU 1	1	Champaign	(AS) Active Standard	COMM	UNC	UGR (Gravel)	Farmersville Complex	210	ug/l	17	71	78	84
39CHA00410	MECHANICSBURG WELLFIELD	4	Champaign	(IN) Inactive	COMM	UNC	USG (Sand/Gravel)	Little Darby	73	ug/l	6	110	120	134
39CHA00412	NORTH LEWISBURG WELLFIELD	2	Champaign	(AR) Active Rotational	COMM	LS	CDO (Dolostone)	(blank)	143	ug/l	18	10	12	14
39CHA08746	MECHANICSBURG WELLFIELD	1	Champaign	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Little Darby	98.5	ug/l	19	27	35	43
39CLA00048	NEW CARLISLE WELLFIELD	1	Clark	(AR) Active Rotational	COMM	UNC	USG (Sand/Gravel)	Honey Creek	113	ug/l	36	157	213	256
39CLA00075	SPRINGFIELD WTP	5	Clark	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Mad River	96	ug/l	38	104	139	205
39CLA00090	ENON WELLFIELD	2	Clark	(AS) Active Standard	COMM	UNC	USG (Sand/Gravel)	Mad River	78	ug/l	29	26	58	118
39CLA00112	PARKLAKE APARTMENTS	1	Clark	(IN) Inactive	NTNC	UNC	USG (Sand/Gravel)	Mad River	0	ug/l	11	0	0	0
39CLA00186	SPRINGFIELD WTP	7	Clark	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Mad River	107	ug/l	10	98	116	145
39CLA00287	ENON WELLFIELD	1	Clark	(SB) Standby	COMM	UNC	USG (Sand/Gravel)	Mad River	50	ug/l	4	0	26	65
39CLE00063	CAPT. ANTHONY MELDAHLM	1	Clermont	(IN) Inactive	NTNC	UNC	USG (Sand/Gravel)	Ohio River	105	ug/l	5	25	336	460

0 equals ND (<10 ug/l); 0 was used for ND values to calculate average.

Mean Mn Concentrations in Only Community PWS Wells of the Ambient GW Program



0 10 20 40 Miles

Mean System Raw Mn Concentrations (mg/L)

- 0 - 50
- 50.1 - 300
- 300.1 - 1000
- 1000.1 - 5000

- Sand & Gravel Aquifers
- Sandstone Aquifers
- Carbonate Aquifers
- Interbedded Shale/Carbonate
- County Boundaries

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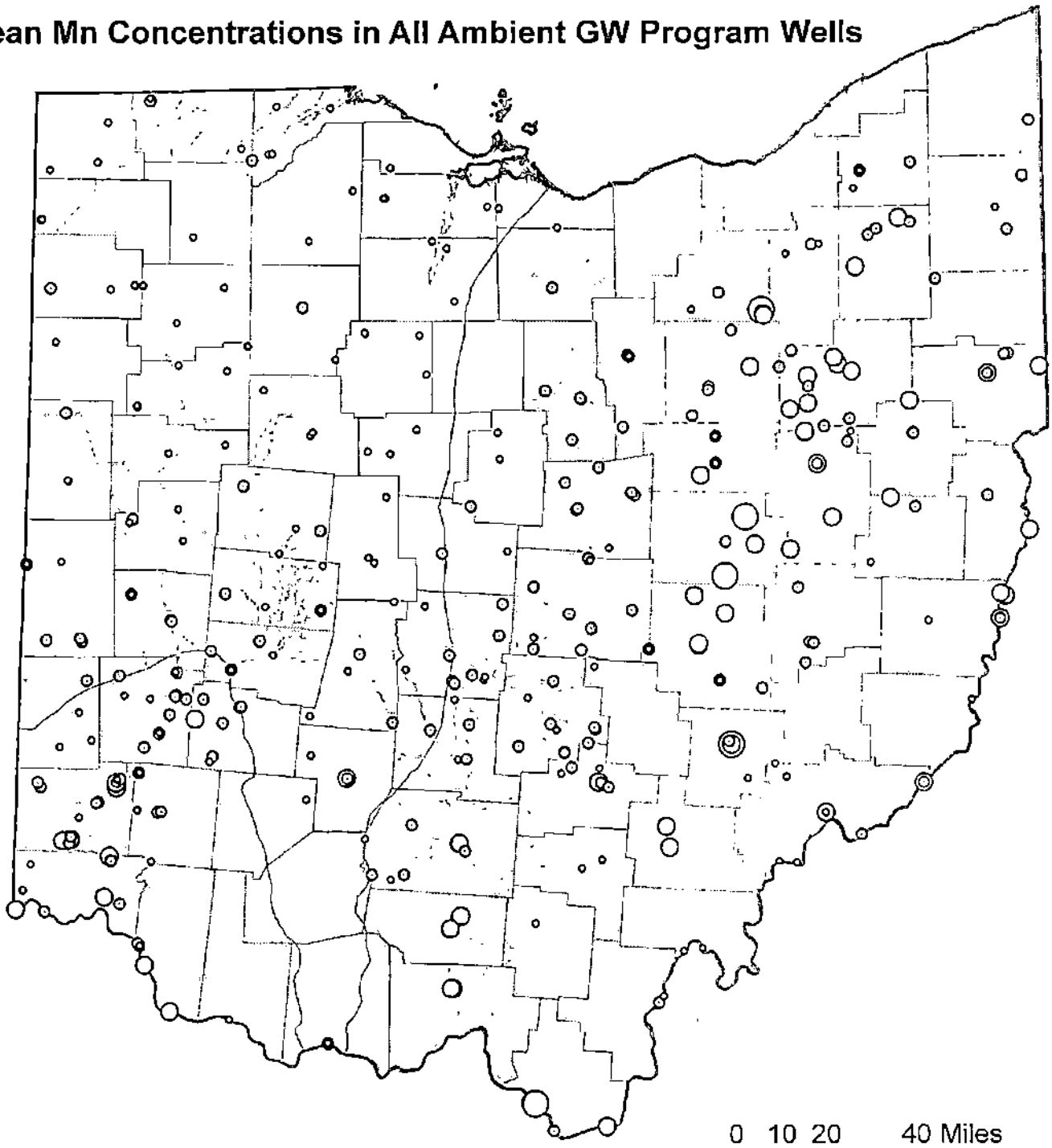
Environmental Protection Agency

Division of Drinking and Ground Waters

March 19, 2010

Mean Mn Concentrations in All Ambient GW Program Wells



0 10 20 40 Miles

Mean System Raw Mn Concentrations (mg/L)

- 0 - 50
- 50.1 - 300
- 300.1 - 1000
- 1000.1 - 5000

- Sand & Gravel Aquifers
- Sandstone Aquifers
- Carbonate Aquifers
- Interbedded Shale/Carbonate
- County Boundaries

N

Environmental Protection Agency

Division of Drinking and Ground Waters

March 19, 2010

Interoffice Memo

Environmental Protection Agency

To: Paul Koval, DAPC

CC: Carolyn O'Neal, CDO-DDAGW; Judy Scott, City of Mount Vernon

From: Mike Eggert, DDAGW

Date: March 18, 2010

Re: *Manganese Levels in City of Mount Vernon Ground Water and Treated Drinking Water*

This summary was developed at the request of Paul Koval, DAPC, (who is working with U.S. EPA and ATSDR on a research project studying manganese exposure levels in Ohio) to provide information on manganese levels in the City of Mount Vernon's ambient ground water quality (untreated), treated drinking water and a brief discussion on statewide manganese levels in ambient ground water quality.

Ambient Ground Water Quality Monitoring Data (Raw Water)

Mount Vernon's well field is located in the Kokosing Buried Valley sand and gravel aquifer. The average manganese concentration in Mount Vernon's ground water is 107 ug/l based on data collected from 20 samples collected from 1991 to 2008. The Fredericktown well field has a higher average manganese concentration than Mount Vernon and is located in the same aquifer formation approximately six miles to the north.

aquifer_name	Station Name	Units	Sample Count	Min	Avg	Max	Avg Well Depth
Kokosing Buried Valley	FREDERICKTOWN WELLFIELD	ug/l	26	175	203	228	132
	MT. VERNON WELLFIELD	ug/l	20	94	107	117	98
Kokosing Buried Valley Total			46	94	161	228	117

Statewide Summary of Manganese in Ground Water

Attached is a statewide summary, by ambient ground water quality monitoring station, which provides statistics on manganese concentrations in ground water. Wells located in unconsolidated sand and gravel deposits and sandstone/inter-bedded sandstone bedrock formations in eastern Ohio exhibit higher levels of naturally occurring manganese in ground water. A principal factor that controls the concentration of manganese in ground water is the redox condition. A more reduced condition (less oxygen) in the aquifer usually results in higher manganese concentration. Most of the ambient ground water quality monitoring stations reflect natural conditions, however a few of the stations located industrial sites exhibit very elevated concentrations (3,000 to 8,000 ug/l) and are most likely impacted by anthropogenic activities. Below is a manganese summary by major aquifer type for only the ambient ground water monitoring wells (active and inactive) used by ~240 community public water systems. The average concentration in the sandstone and unconsolidated aquifers is approximately 210 ug/l.

Lithcode	Units	Sample Count	Min	Avg	Max	Avg Well Depth
Carbonate (limestone, dolomite, etc)	ug/l	856	0	26	578	230
Sandstone - Interbedded Sandstone	ug/l	566	0	212	2080	189
Unconsolidated (sand and gravel)	ug/l	3209	0	210	5130	99

Note: 0 is non-detect (< 10 ug/l) and used to calculate average.

All community public water systems in Ohio with manganese concentrations exceeding 50 ug/l are required to provide treatment to reduce the levels to meet the secondary maximum contaminant limit (50 ug/l).

Additional manganese information (concentration distribution map, page 23) is available in the Division's 2000 Ground Water 305(b) report.
http://www.epa.state.oh.us/portals/28/documents/gwqcp/2000_305b.pdf

City of Mount Vernon's Treated Drinking Water

The Agency does not have manganese data for the treated (or finished) drinking water. Mount Vernon's treatment plant uses lime-soda softening process which is very effective in removing manganese. Mount Vernon public water system (PWS) is not required to collect and report manganese data to the Agency.

I spoke with Judy Scott, designated operator for Mount Vernon PWS. She indicated they do not routinely sample for manganese in the treated water. However, the City was requested on March 10 to collect a sample by the City's administrator to support the research study in question. The results should be available next week.

Judy Scott contact information -
Email: treatdistadmin@mountvernonohio.org
Phone: 740.393.9502

Davis, Stephanie I. (CDC/ONDIEH/NCEH)

From: Wagner.Jaime@epamail.epa.gov
Sent: Monday, July 26, 2010 1:00 PM
To: Davis, Stephanie I. (ATSDR/DHS/HIBR)
Cc: Greg Stein; PSC Colledge.Michelle EPAMAIL.EPA.GOV
Subject: RE: Cancer

Margaret Millard is the Region 5 CARE Program contact. I do know that competition for the 2010 grants has been completed. The next grant competition would likely start in the February-April 2011 timeframe, but Margaret Millard would know all the details. She would also be the one to talk to a community about the CARE process, etc.

Her email is: millard.margaret@epa.gov
Her phone number is: (312) 353-1440

Hope this helps!
Jaime

From: "Davis, Stephanie I. (ATSDR/DHS/HIBR)" <sgd8@cdc.gov>

To: Michelle Colledge/R5/USEPA/US@EPA, "Greg Stein" <Greg.Stein@odh.ohio.gov>

Cc: Jaime Wagner/R5/USEPA/US@EPA

Date: 07/23/2010 05:45 PM

Subject: RE: Cancer

Hi Michelle and Greg:

I wonder if the EPA CARE program might be a way we can assist East Liverpool?

http://www.epa.gov/care/basic.htm

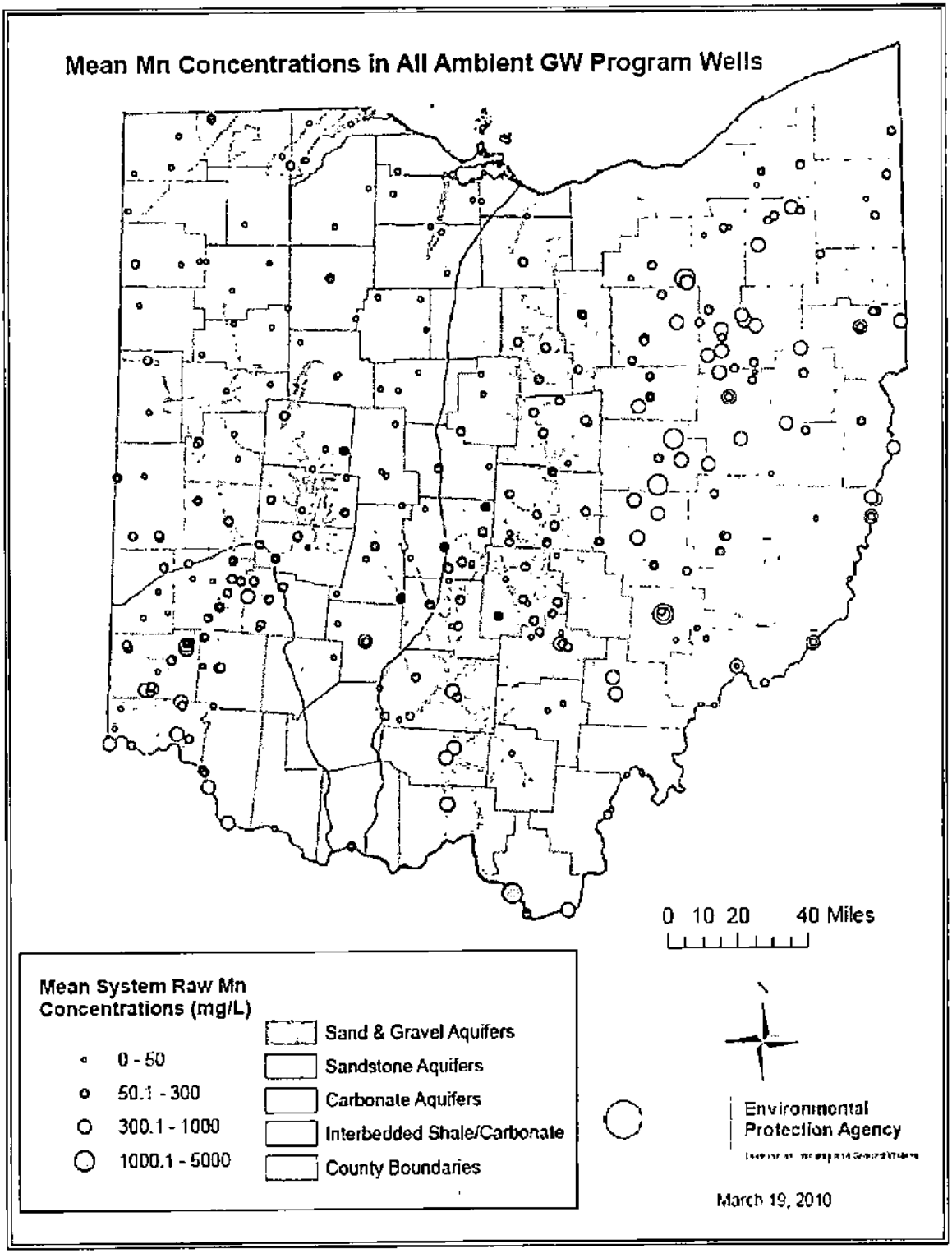
This is the program that I am helping Lora Werner and EPA Region 3 bring some research dollars in to study mountaintop mining in WV. ATSDR and EPA are working together under a 2007 MOU.

We may be able to help the community apply for a Level I cooperative agreement, then see if their performance will allow them to compete well for a Level II cooperative agreement.

I don't mind helping out at all. Maybe you or Jaime can identify a Region 5 EPA person who is working with this program.

Steph

Appendix E. Proposed Ohio County Ground Water Exposure Classification by Underlying Geology (Source: Ohio EPA)



Davis, Stephanie I. (CDC/ONDIEH/NCEH)

From: PSC Colledge.Michelle EPAMAIL.EPA.GOV
Sent: Thursday, October 28, 2010 10:44 AM
To: Davis.Alison@epamail.epa.gov
Cc: Wagner.Jaime@epamail.epa.gov; Cannon.Phillippa@epamail.epa.gov; Davis, Stephanie I. (ATSDR/DHS/HIBR)
Subject: Re: Our folks are asking if we can delay announce til early next week -- they are drowning.

Alison-

Interesting article. Our division of health studies will be doing a review of "parkinson's like disease" in E. Liverpool, but we aren't mentioning that until we have some results to share.

As for the rest, that is my understanding as well.

Thx
Michelle

Michelle A. Colledge MPH, PhD
LCDR, U.S. Public Health Service
Agency for Toxic Substances and Disease Registry/NCEH/CDC, Region 5
77 W. Jackson Blvd., Room 413
Mailstop ATSD-4J
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Fax: 312-886-6066

From: Alison Davis/RTP/USEPA/US
To: Michelle Colledge/R5/USEPA/US@EPA
Cc: Jaime Wagner/R5/USEPA/US@EPA, Phillippa Cannon/R5/USEPA/US@EPA
Date: 10/28/2010 09:24 AM
Subject: Re: Our folks are asking if we can delay announce til early next week -- they are drowning.

So here's my understanding: We are not announcing today. Vivi is OK with that. Your folks are planning to issue a media advisory about the meeting today. The Administrator's press secretary has OKd that approach; we will say that we will make our report available in plenty of time for people to review it before the meeting (translation - next week, but we don't know what day yet.

One thing we all should probably chat about. This story is in the clips today, about a possible link between manganese pollution and Parkinson's disease.

News Headline: Metal pollution tied to Parkinson's disease |

Outlet Full Name: Reuters - Online
News OCR Text: NEW YORK (Reuters Health) - People living near a steel factory or another source of high manganese emissions are at higher risk of developing Parkinson's disease, suggests a new study.

As many as one million Americans live with the degenerative disease, according to the Parkinson's Disease Foundation. Pesticides from farms have long been suspected of upping the chances of developing Parkinson's, but much less is known about the influences of city living.

"Environmental risk factors for Parkinson's disease have been relatively under-studied, especially in urban areas where the overwhelming majority of Parkinson's disease patients reside," Dr. Brad A. Racette of the Washington University School of Medicine in St. Louis, Missouri, told Reuters Health in an e-mail.

Earlier research had tied heavy metals to Parkinson-like brain damage, but it wasn't clear if they could also play a role in people who aren't exposed to the metals as part of their job.

So Racette and his colleagues analyzed data on about five million Medicare beneficiaries who hadn't moved between counties from 1995 to 2003. Then they compared Parkinson's rates to industry emissions of copper, lead and manganese obtained from the Environmental Protection Agency.

By 2003, less than one percent of people in urban areas developed Parkinson's disease. In counties with little or no release of the metals, 274 out of every 100,000 people had the disease, compared to 489 in counties with high manganese levels.

The risk remained increased even after accounting for differences in age, sex and race, report the researchers in the American Journal of Epidemiology.

Areas with high copper emissions also saw more cases of Parkinson's, but the increase was so slight it could have been due to chance.

The researchers say they don't know whether manganese actually caused more people to get Parkinson's disease. It's possible that other risk factors in counties with lots of manganese emissions could be to blame.

"Although the findings related to manganese are very compelling, future studies investigating individual patient exposures and risk of Parkinson's disease will be required to confirm our study," said Racette.

"Understanding community level exposures to environmental toxins will be critical to determining the causes of most cases of Parkinson's disease," he added. "If our findings are confirmed, our data would suggest that reducing industrial metal emissions may result in a substantial reduction in the number of new cases."

SOURCE: link.reuters.com/zet52q American Journal of Epidemiology, online October 19, 2010.

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From: Michelle Colledge/R5/USEPA/US
To: Alison Davis/RTP/USEPA/US@EPA
Cc: Jaime Wagner/R5/USEPA/US@EPA
Date: 10/28/2010 10:09 AM
Subject: Re: Our folks are asking if we can delay announce til early next week -- they are drowning.

No issue as far as I'm concerned.

Michelle A. Colledge MPH, PhD
LCDR, U.S. Public Health Service
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From: Alison Davis/RTP/USEPA/US
To: Michelle Colledge/R5/USEPA/US@EPA, Jaime Wagner/R5/USEPA/US@EPA
Date: 10/26/2010 05:21 PM
Subject: Our folks are asking if we can delay announce til early next week -- they are drowning.

Let us know. We can make it work - but early next week would be easier .

Alison Davis
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